Medicinal Herb Production and Marketing

March 1997 - March 1999

Project completed by:

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Please Note:

The information in this publication has been gathered from producers in the North East region of the province over the past two years.

- The Agronomic information should not be considered as recommendations but only what any one individual may have done in producing any of the commodities listed with in this publication.

- The cost of production information gathered was wide ranging and limited so that it should only be used as a reference. In most cases the producers are growing these commodities on such a small scale that detailed and complete cost of production information has not been recorded. We hope that the costs included are helpful.

The medicinal herb industry is in its infancy in Saskatchewan. It is our hope that this information will be helpful in learning how to cultivate and market these commodities in a profitable manner.

Herbs contained in this survey include:

Echinacea angustifolia
Echinacea purpurea
Fireweed
Garlic
Feverfew
Burdock

At the back of this report you will find a copy of the survey form filled out by the producers surveyed. If you wish to keep track of your agronomic and cost of production information on it, you may find it helpful. We would appreciate receiving any information you wish to supply. Send your information to:

Leroy Bader, PAg
Extension Agrologist
Tisdale Rural Service Centre
Box 1480, Tisdale, Sask.
SOE 1TO

Echinacea angustifolia:

Crop Establishment:

The first step will be to purchase seed. We found a wide range of seed prices, so would advise producers to make several inquires prior to final purchase

Prices range from $650/lb to $1000/lb.
Other prices reported include - $125/oz. or $400 per quarter pound.

Some of the things to watch for include:

- How well is the seed cleaned.
- Has the species been verified as angustifolia.
- Do a germination test using 100 seeds from your new purchase so you are aware of the potential viability of the seed.

Stratification

Echinacea angustifolia seed will need to be stratified. Stratification is a period of moist or dry chilling which helps break the dormancy of seeds. The following are some methods used by producers in the survey.

1. Place the seed in a zip lock bag and store in the deep freeze for 30 to 60 days.
2. Mix thee seed with moist sand and store in the fridge at 4 degrees C for at least 18 days. Be sure to monitor the storage bags for fungal development during this time.
3. One producer placed his seed out on flats, which remained outside for the winter. The seed went through the stratification period and germinated when the weather was favorable in the spring.

Germination

Germination of most stratified seed is in the 60 - 90% range.

Methods used by producers:

1. Place the seed you want to germinate in a container of warm water for about two hours. Remove the seed after two hours and place it on wet paper towels in a tray. Distribute several pieces of apple amongst the seeds and then cover the tray with saran wrap. Place it in a well lit room or under a grow light. Seed will become fuzzy and get little white tails in about 2-3 days. Using tweezers plant the seeds into plug trays and leave until the plant is several inches high. Option: This producer uses a styrofoam tray, from a local tree nursery, which will hold 198 plants.

2. Seed can be surface placed into sterilized dirt trays. Insure that seed is pressed firmly in place for good soil to seed contact. These trays are then kept at 70 degrees C in a sunny place. In 3-4 days seeds begin to germinate. You may leave them in the tray until transferring out into the field or transplant them into individual plug trays.

3. In this case seed was surface seeded into individual plug trays in the fall. The trays were then kept through the winter in a cold storage room. In the spring the plug trays were brought out and placed under grow lights. Germination was about 75% and took only a few days. Some of the trays had empty cells, but this producer did not have to transfer the seedlings into plug trays, saving one step.

Options:

Prior to seeding soak your seed in a 5% bleach solution for 10 minutes. Rinse the seed with clean water, then proceed with the germination process. This will help keep fungus from developing.

Producers start germinating seed anywhere from mid March to June depending on this methods and facilities. Most plants are started six weeks prior to being transferred into the field.

Caution – Excessive temperatures during the germination period may lower the percent of seeds that germinate.

Some producers save trays, with seed that has not germinated, in an outside location and find that some of the seed will germinate in the second year.

Direct Seeding:

Some producers are now direct seeding their angustifolia. Here are two methods which were used and have proven successful.

1. Plastic mulch was laid down in a well prepared field. A tool was made to poke holes in the poly leaving 3 rows, with a 6 inch spacing between plants. Seed was then mixed with a small amount of sand and surface applied. (approximately 6-8 seeds/hole). Seed was not stratified for fall seeding. Seeding was done when soil temperatures were less than 5 degrees C. Spring seeding was also done but seed needs to be stratified. T-Tape irrigation was laid under some of the poly to help keep seed moist during germination. Germination on these plots ranged for 50 - 70 %.

   Time: It took approx. 32 hours to establish 20,000 holes.

2. One producers field was established on newly broken land which had been summerfallowed for weed control. The plot was tilled and then seed was placed into the furrows during the fall. Germination in this plot was around 70%. Beware - This is an exception to the rule as not many plots are weed free enough to attempt direct seeding without the use of polyethelene mulch.

Purchasing Seedlings:

Prices generally ranged from 10 to 26 cents for a seedling, but have also sold for as high as 50 cents. You generally get what you pay for. The 10 cent seedlings were received in a flat, you then shake the dirt off the seedlings and plant the bare root. The 26 cent seedlings were plugs and could be used with a mechanical transplanter.

When purchasing your seedlings make sure to inquire about the form they will be delivered in and the date of delivery.

Some producers have no facilities in which to start plants so purchasing seedlings is a good option.

Transplanting to the field:

Most producers established seedlings in the field by hand planting. In general, irrigation was only done during crop establishment.

1. Work the field prior to planting and wet the area to be planted. Remove the seedlings from their trays and shake the dirt from the roots. Using a stick or your finger, merely press the plants into the area prepared for planting.

2. A dibbler may be used. This is a tool used for tree planting. It allows the planting of one seedling at a time as you walk along. The seedlings must be a plug and not bare root.

3. Water wheel transplanters have also been used. These planters open the soil surface, insert the transplant and then replace soil around the plant. This machine also gives the new seedling a drink of water as it placed in the soil.

Seedlings are transferred into the field when the risk of frost has passed. We have found that row spacing is dependent on the machinery used for weed control and harvest.

1. Plant two rows together with 2 feet between rows and 4" between plants. Allow room for a tiller to pass in the alleyways.

2. Single rows have been established with plant spacing ranging from 6 - 8 inches and again room for a tiller between rows.

Time: One producer found it took 60 hours to germinate and transplant 3,000 seedlings. Another found it took 220 hours to germinate and transplant 15,000 seedlings.

Weeding and Maintenance:

Most of the producers hand weeded between the plants and used a tiller or implement to control weeds between rows.

One producer uses an inter-row cultivator to weed between the rows, but must hand weed or use poly to maintain between the plants.

Some obvious advantages and time savings have been identified with the use of a polyethelene mulch. Another very important factor is to have weeds under control prior to planting. This factored along with the machinery you have available will determine the amount of time you spend in the field.

Time: Some producers spent as much as 400 hours to maintain 10,000 plants and others have spent 30 hours to maintain 3,000 plants.

Harvest Operations:

a) Foliage

Harvested in the second year by collecting the top two-thirds of the plant during late July to early August.

Yield: 15lb dry product from 500 plants at full bloom.

b) Seed

Harvested in the second year in late September to early October. Cone heads, which appear mature, are collected using scissors or pruning shears. Some producers will harvest the cone heads two or three times as not all the heads mature at the same time. The seed is then threshed out of the head either by hand or using small machinery. Some producers took the cone heads to the University of Sask. Engineering Department where they threshed and cleaned the seed.

Time:

- One producer remarked it took about 16 hours to complete this procedure on 10,000 plants. His seed was taken to the U of S to be cleaned.
- Another took 75 hours to collect and clean seed from 15,000 plants. This producer did all the threshing and cleaning himself.

Yields:

a) Seed

Yields varied considerably due to the fact that some producers do not collect all the cone heads. Some reported yields include:20 lb./ 2,000 plants; 30 lb./ 15,000 plants; 11 lb./ 10,000 plants

Sample sale prices reported include $650/lb; $800/ lb; $1000/ lb.

b) Root

Some third year root was harvested this year. Methods of digging ranged from use of a backhoe, which removed roots from a depth of 3 feet, to the use of a deep tillage cultivator. Roots were dug, washed and then natural air dried in the dark. Product was then stored in large plastic bags with small holes made in the bag to guard against mold.

Time: Was variable depending on the technique used.

Yield

- 55 lb. dry/ 200 plants
- 20 lb. dry root/ 100 plants
- One producer found he got 8 roots/ pound, yet another took 18 roots to make a pound.

Note: Soil type, growing conditions and the time of establishment will dictate yield.

Price: $50/ lb. (organic)
$38/ lb. (organic)
$25/ lb. (non-organic)

Problems:

Aster yellows appeared in some of the crops. The plants with symptoms of yellowing were removed from the field to reduce the risk of infecting the rest of the crop. Aster yellows is a viral disease transmitted by a leaf hopper.

Planting on weed infested land makes maintenance of the crop extremely time consuming.

Planting angustifolia and purpurea in close proximity may result in cross pollination and hybridization. Pollen can be carried by bees for several miles.

A well drained soil is essential to avoid heavy losses from root rot.

Heavy soils make root harvest very difficult, almost to the point of impossible.

Recommendations:

Irrigation during the establishment of seedlings or the germination of direct seeded plants is very important.

Adding extra moisture through the year helps but is not necessary. Beware not to over water.

Adding fish fertilizer or any organic fertilizer will increase yield.

Weed free crops do better.

Check your crop regularly.

Plant on a hillside for better drainage.

Echinacea purpurea

Crop Establishment:

Purchasing seed: purpurea seed sells from $122/lb. to $110/lb.

Germination:

Methods used:

1. Stratified seed was placed onto flats and slightly covered with soil. The trays were put out into the greenhouse and within 4 - 7 days 90% of the seed had germinated.

Direct Seeding:

Method used:

1. A press drill was modified and used for direct seeding. Javex jugs, with the bottoms cut out, were placed upside down in the seeding box to serve as individual pathways for seed. This allowed for proper spacing of the seed and a more controlled flow. One pound of seed was mixed with three pounds of prelate, this helped bulk up the seed giving a wider plant spacing. The seed was placed 1/4 inch deep and germination started within a week.

Transplanting into the Field :

1. A water wheel transplanter was used to establish rows 10" apart with a plant spacing of 5".

2. A Dibbler was used and plants were spaced 1 foot apart with 1 foot between rows.

The manner in which plants are set out into the field and the spacing used are determined by the type of machinery used for weed maintenance and harvest.

Weeds and Maintenance:

Irrigation was used to establish seedlings.

Most weeding was done by hand and using a tiller.

One producer used an inter-row cultivator to weed between the rows, but still had to hand weed between plants.

Harvest Operations:

a) Herb

The top two thirds of the plant was collected at full bloom. The herb was washed in an old washing machine then placed in a dark green house to dry. Some producers place black poly over their greenhouse to create a drying shed in the fall. With the addition of fans for air flow this seems to be working very well.

The herb was then chopped up by feeding it through a silage machine. The product was stored in mini bulk bags until a suitable sale could be found.

b) Root

Root was dug in October of the second year. The root was collected using a potato fork, then washed and dried in the same manner as the herb. This product was left whole for marketing and stored in mini bulk bags.

Problems:

Weeds were the main problem. The area was too large to maintain by hand and created a large demand on labour.

Severe losses from winter kill were noted in 1997.

Do not plant near canola as aster yellows is a problem with purpurea.

Recommendations:

Using poly for weed control is a good option.

Irrigation throughout the year increased yields.

One producer plans to seed directly into plug trays in order to eliminate transferring the seedlings twice prior to field planting.

Indications were that transplanting in the three leaf stage was most effective.

Fireweed

Crop Establishment:

There has been no direct seeding to-date and no one in our survey has done their own germination of seed. Seedling stock was purchased at a price of .26 cents/ seedling.

Transfer into Field:

Method

1. Seedlings were planted using a water wheel transplanter. Rows were 42" apart and 30" between plants. It took about 60 hours to establish 10,000 seedlings.

2. Seedlings were hand transplanted the first year (1997) at 18" square spacing. By the second year (1998) of growth these spaces had filled in from rhizome growth. The second year seedlings were planted with a jab planter at one meter square spacing as the plants spread so easily.

Planting was done in June the first year, 80% survived and bloomed the first year.
The second year seedlings arrived late August and were over grown and did not transplant as well.

Weeding and Maintenance:

All weeding was done by hand.

Time: The producer estimated it took 40 hours to weed and maintain 10,000 plants.

Harvest:

The 1997 crop was harvested twice in 1998. Two cuts were taken, one in early July and the other in August. A haybine was used to cut the top two thirds of the plant. The crop was left to dry for a day or two then loosely baled. The leaves were fairly dry by this time so baling was done at a time when there was a little dew on the crop. Bales were then placed in an aeration bin to dry. After drying the product was fed through a hammermill using a 3/8" screen and stored in mini bulk bags.

Time: It took about two days for this procedure. (10,000 plants)

Yield: Approximately 800 lb. was harvested from the 1/2 acre plot.

Price: If the crop is of top grade the price received will be $6.00 to $6.25/kg providing a gross return of around $2,000.

Note:

Another producer wild crafted 40 half tons loads of fireweed. This was all done by hand taking the top two thirds of the plant. The product was then dried in the greenhouse and feed through a silage machine. Using mini bulk bags the herb was stored then sold.

Yield: 702 kg

Price: Product was sold for $5.25/kg.
Total gross income $4,036.50 (This producer said he lost $.25/kg due to the fact that the product was not ground fine enough.)

Garlic

Crop Establishment:

Seed can be purchased for around $5.00/lb. Each garlic bulb must be cracked open and the cloves separated.

This crop is established by direct seeding. Modifying a cultivator shovel so it has a drop tube behind to feed the garlic cloves through works well. Cloves are place 2.5 - 3 inches deep trying to insure the root is pointing down.

A row spacing of 27" was used with 6" between plants. Row spacing will be determined by the machinery used for weed control and harvest.

The crop can be fall or spring seeded. Late seeded crops will suffer from low yields. Fertilizer was applied at a rate of 100 lb of 46-0-0/ acre.

Harvest:

Garlic is undercut then collected by hand. Place the harvested garlic in the sun to dry in a single layer to avoid mold problems. Rub excess dirt from dried product and store in mesh bags. Garlic should be stored in a cool, dry area insuring not to place too many bulbs in each bag as mold will develop if air is restricted.

Marketing and Pricing

Product was sold for $3.00 - $3.50/lb.
Pickled garlic was processed and sold for $5.00/250 ml jar.

Feverfew

Crop establishment:

Seed:

Seed price paid was $167/100g

Germination:

Method

1. Seed was spread on top of soil and kept moist in natural sunlight. Germination was 85 - 90% and took 10 -14 days.

2. Covered seed slightly with soil in early April. Trays were kept moist in natural sunlight. Germination took quite some time with only a moderate amount of seedlings emerging.

Tranfer into Field

1. Transplanted the first weekend in June. Rows 700' long, with 10" plant spacings, were established. Approximately 95% of the seedlings survived the growing season.

2. Transplanted in early to mid June. Transplants were placed by hand in rows 4' wide and a 6" spacing between plants. Water was supplied during establishment and very little death loss was apparent.

Weeding and Maintenance:

Most weeding is done by hand or with the aid of small machinery.

Harvest Operation:

1. The top two thirds of the plant was harvested July 30/98. The herb was hand cut, washed and then dried in a dark, well ventilated greenhouse.

2. Second year crop was cut twice; end of June and the end of July. Top two thirds of the plant was cut using a swather. The plants were then washed and dried in a large shed.

Yield

- 14,000 plants yielded approx. 300 lbs of dry herb.

Gross income: $1,500

- Approx. 7,000 plants yielded approx 676 lbs. of dry herb
  Gross income: $4.20/lb (non-organic) X 676 lbs = $ 2,835

Japanese Burdock

Crop establishment:

Seed:

Cost of seed: $60/lb

Establishment:

Seeding date: June 11, 1998
Seeding rate: 5-lb/ acre

Method Used:

Burdock was direct seeded in rows 2' apart with 3" between plants. Seeding depth was 1.5 inches. The crop had good germination and established with out any production problems.

Harvest Operation:

This producer waited until the second year and harvested the seed. Pami tried harvesting with a California Bean Picker, which worked to some degree but did not get all the seed. The seed was then cleaned and bagged.
This producer thought it would be more economical to market the seed than harvest the root.

Note:

Harvey Clarke, market analyst with PFRA in Outlook, sent us his list of medicinal herb market prices as of December 15, 1998. We have attached this for your reference.

Medicinal Herbs

Prepared by:
Harvey Clark,
Saskatchewan Irrigation Development Centre,
December 15, 1998.

Prices of Medicinal Herbs - December 15, 1998 - price per pound ($U.S.).				
Herb (Dried)	**Source**	**Organic Prices (Buying <500 lb) (Asking 1 lb or 1 kg)**	**Non-Certified Medicinal (<500 lb to retail)**	**Non-Medicinal or Medicinal (500 lb or more)**
Alfalfa Leaf	Canada, U.S.	5.10 - 10.33	1.60 - 8.00	0.16 - .80
Alfalfa Seed	Canada	7.25		.65 - 1.00
Anise Seed	Turkey, China	2.95 - 9.60	2.40 - 6.90	.90 - 1.80
Angelica Root		6.25 - 23.60	5.60 - 13.60	2.40 - 4.80
Astragalus Root		10.00 - 46.60	2.80 - 6.00	2.8
Basil Leaves	Egypt	8.90 - 18.70	2.80 - 16.40	1.60 - 2.50
Black Cohosh Root		5.20 - 16.00	4.00 - 10.40	1.20 - 2.80
Blessed Thistle Herb		5.00 - 17.10	2.30 - 16.00	1.10 - 3.00
Borage Seed	Canada	8.00 - 25.00	4.60 - 19.20	1.63 - 4.00
Burdock Root	Europe	4.80 - 23.80	2.50 - 13.60	1.40 - 2.50
Calamus Root		8.00 - 26.25	2.20 - 14.40	.90 - 2.25
Caraway Seed	Canada		1.60 - 7.10	.20 - 1.20
Catnip		4.00 - 16.40	1.90 - 13.10	.85 - 3.25
Chamomile Flowers (German)	Egypt	8.00 - 25.00	5.85 - 12.20	2.00 - 6.00
Chamomile Flowers (Roman)	France	12.00 - 62.00	4.00 - 44.70	3.50 - 5.20
Chickory Root		2.80 - 12.80	1.90 - 10.40	.90 - 1.90
Cilantro Leaf		18.70 - 26.90		4.00 - 16.00
Comfrey Leaf		5.00 - 21.80	4.20 - 16.80	1.80 - 3.85
Coriander Seed	Canada	1.68 - 8.20	1.40 - 4.40	.13 - .90
Dandelion Leaf	Europe	6.00 - 18.00	1.63 - 14.40	1.63 - 3.20
Dandelion Root	Europe	6.00 - 27.90	2.28 - 15.30	1.95 - 4.00

Dill Weed		9.90 - 28.00	3.50 - 12.00	
Dill Seed	Canada, India		2.40 - 4.80	.13 - 1.80
Dong Quai Root	China, Germany	65.30	1.36 - 3.50	1.36 - 1.81
Echinacea Angustifolia				
Leaf	U.S.	7.80 - 47.30	6.50 - 39.10	3.50 - 6.50
Root	U.S.	19.00 - 92.80	16.00 - 56.00	10.00 - 22.00
Echinacea Purpurea				
Leaf	U.S.	5.50 - 18.30	5.00 - 19.40	2.28 - 4.00
Root	U.S.	16.00 - 38.60	12.00 - 34.20	6.50 - 11.70
Echinacea Pallida				
Root	U.S.	18.00 - 78.00		6.50 - 15.00
Elecampane	China	9.00 - 16.20	1.93 - 2.50	
Eleuthero Root (Siberian Ginseng)		15.00 - 32.50	14.50 - 14.90	2.40 - 2.45
Fennel Seeds	Egypt, India	4.42 - 11.80	.81 - 7.00	.81 - 1.40
Fenugreek Seeds		4.40 - 14.20	5.80	.20 - 3.00
Feverfew	Canada, U.S.	7.00 - 24.30	4.36 - 12.00	1.40 - 5.50
Flax Seeds	Canada	2.70		.09 - 1.50
Fo-Ti Root	China	24.20	1.98 - 14.50	
Garlic Bulbs/Powder	China, U.S.	2.50 - 14.60	2.00 - 6.90	.51 - 1.85
Gentian Root	Europe	10.20 - 30.90	3.25 - 21.20	2.60 - 6.00
Ginseng Root				
Panax (Oriental)	China, Korea		12.50 - 167.00	5.00 - 36.00
Quinquefolius (American)	Canada, U.S.	77.00 - 340.00	23.00 - 185.20	7.00 - 23.00
Goldenseal				
Herb	U.S.		20.00 - 48.00	
Root	U.S.	50.00 - 110.00	30.00 - 70.00	24.00 - 32.00
Horehound Herb	Europe	8.00 - 23.60	1.80 - 12.10	.80 - 1.45
Horseradish Root	U.S. / Canada	13.50 - 25.00		1.28 - 2.40
Hyssop Herb		9.10 - 21.50.	1.80 - 12.80.	.65 - 1.95
Lemon Balm		7.00 - 20.20	2.85 - 13.60	1.80 - 2.40
Lemongrass		5.70 - 15.40	2.00 - 6.40	1.30 - 2.00
Licorice Root	Egypt/China	10.00 - 18.90	1.90 - 10.90	.80 - 1.60
Lovage Root		8.00 - 27.50	2.80 - 15.90	1.45 - 2.50

Marjoram Herb		12.00 - 44.10	1.80 - 9.60	.85 - 1.45
Marshmallow Root		5.90 - 25.60	3.20 - 17.00	2.20 - 2.80
Milk Thistle Seeds	Europe/S.America	10.00 - 20.00	6.00 - 16.00	3.25 - 6.00
Mustard Seeds	Canada	4.50 - 7.37	1.95 - 4.60	.11 - .19
Nettle Leaf	Europe/ U.S.	7.00 - 18.00	1.47 - 8.30	1.10 - 1.80
Oat Straw	Canada/ U.S.	2.80 - 20.00	1.20 - 6.30	.17 - .90
Oregano Herb	U.S.	9.00 - 18.70	1.90 - 9.20	.80 - 1.60
Peppermint Leaf	U.S.	3.80 - 10.80	2.40 - 6.50	1.20 - 1.80
Raspberry Leaves	U.S./ Canada	7.90 - 21.20	1.60 - 7.30	.85 - 1.30
Red Clover Blossoms	U.S.	8.00 - 35.00	2.30 - 25.60	2.00 - 3.50
Rosehips		6.75 - 9.75	1.40 - 4.00	.45 - .90
Rosemary Herb		7.00 - 15.80	1.35 - 6.00	.45 - .90
Rue		12.00 - 19.00	5.00 - 18.10	1.60 - 2.60
Sage Leaf	U.S.	6.50 - 22.50	1.85 - 13.90	.95 - 1.40
Sarsaparilla Root	Mexico/Jamaica	19.50 - 26.00	2.60 - 20.60	.95 - 2.00
Savory		22.20 - 35.90	2.20 - 12.00	1.20 - 1.90
Scullcap	U.S.	16.00 - 33.00	4.40 - 23.30	3.50 - 4.50
Senega Root	Canada		8.00 - 29.60	5.50 - 10.35
Sheep Sorrel Herb	U.S.	8.00 - 53.00	1.75 - 43.00	1.75 - 3.00
Slippery Elm Bark (Powder)			6.70 - 20.00	3.00 - 6.00
Spearmint Leaf	U.S.	5.25 - 11.50	1.80 - 6.30	.95 - 1.40
St. John's Wort (Leaf & Flowers)		4.50 - 24.40	2.45 - 16.00	.90 - 3.00
Stevia Leaf	South America		2.50 - 30.00	2.50 - 2.72
Tansy		10.00 - 20.00	1.65 - 15.70	.85 - 1.00
Tarragon Herb		12.00 - 47.00	8.00 - 33.00	4.80 - 6.00
Thyme Herb	U.S.	9.00 - 24.00	2.50 - 19.20	1.60 - 2.20
Valerian Root	India/U.S.	10.00 - 32.00	2.90 - 10.00	.85 - 3.50
Wormwood		9.00 - 23.50	1.60 - 13.00	.85 - 1.40
Yarrow		6.00 - 19.20	1.40 - 11.00	.65 - 1.00

(a) Where herb is indicated, this means the above ground portions of the plant including leaf, stalk, and flowers.

Sources of Information:

1. Herbal Resources: http://www.herbsinfo.com/pages/bulky24.htm
2. University Herbs: http://www.univherbs.com/herbchoi.htm
3. Statistics Canada, International Trade Data
4. U.S. Department of Agriculture, Tropical Products: World Markets and Trade
5. Richard Allen Miller, *The Potential of Herbs as a Cash Crop*, 1998, Table 29
6. Pacific Botanicals, 1997-98 price list for Certified Organic and Wildcrafted Herbs
7. Tim Blakley, Frontier Herbs, prices quoted in *Medicinal Herbs in the Garden, Field, and Marketplace*, by Lee Sturdivant and Tim Blakley, 1998
8. Richo Cech, Horizon Herbs, personal communication
9. Richters Herbs, 1998 Herb Catalogue
10. Kathy Vessair, Global Botanicals, personal communication
11. Richard De Silva, Herb Works, Guelph, Ontario, personal communication

Plus various other herb brokers and buyers

Some prices in categories are estimated based on other price information.

For more information, contact
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Updated January 19, 1999
http://www.agr.ca/pfra/sidcpub/herbs.htm

Marketing Medicinal Herbs

Types of Markets: In general growers can sell wildcrafted herbs; organic herbs; herbs grown without chemicals (no fungicides or herbicides, but some may use fertilizers)., but not certified organic or essential oils with no specification on chemical use. Herbs can be fresh or dried, but most often are dried, especially if the buyer is not local.

Value Added Product: Many medicinal herbs will be sold in small containers (usually tinctures with alcohol or powdered in capsules or tablets) for retail prices of $ 10.00 to $20.00 or more per container (eg. 100 capsules @ 500 mg per capsule of ginseng). The total weight of the product may be one pound or less. Retail prices can be ten to twenty times the price that a producer would receive for a large quantity (100 kg) of dried herb. If the herb price is high enough to cover costs, producers may consider contracting for a company to be very reasonable. If the producer price is too low to cover costs, producers may sell value added products to maintain a profit margin.

Wildcrafted to Cultivation: Prices for organic herbs can be higher than for wildctrafted herbs because the buyer has a greater assurance of the quality and consistency of the product. Costs of production for cultivated herbs are often higher than the cost of wildcrafting hers, especially if the herbs are difficult to grow such as goldenseal or senega root. Herbs generally valued at high prices when wildcrafed supplies are scarce. This is true for ginseng, echinacea and golden seal.

Buyers: Local: Bioriginal (Saskatoon): Echinacea, borage, feverfew, valerian, burdock.
Fytokem (Saskatoon): Fireweed.
Mckiwin (Manitoba):New farmers' co-op buying echinacea and other herbs.
Wise Owl Herbs (Unity): Echinacea.

Distant: Global Botanicals (Barrie Ontario): many herbs.
Herb Works (Guelp Ontario)
Frontier Herbs (Boulder Colorado): specific price contracts for may herbs.
Pacific Botanicals (Grants Pass, Oregon): certified organic and wildcrafted.
Horizon Herbs (Williams, Oregon): certified organic, also seed supplier.

Internet: Growers and buyers can place an ad at the Aginfo Internet site:
http://www.aginfonet.sk.ca/marketplace
Herbal Green Pages @ http://herbworld.com/classifieds.htm

Prices: Quotes from Global Botanicals for recent sales:
Echinacea angustifolia root: $25 to $28 / pound Canadian (100-300 kg)
German Chamomile flowers: $4.10/lb (150 kg)
Feverfew herb: $7.50/lb (25 kg)
Milk Thistle Seed (from Europe): $3.50/lb (25 kg)
Valerian root: $4.0/lb (60 kg)
From Statistics Canada:
Ginseng (Canadian): $17 ti $21/lb (recent export sales)

Herb Buyers

Company	Contract	Phone Number
Bioriginal	Carol Farmer	(306) 975-9274
Frontier Herbs	Barb Letchworth	(319) 227-7996
Fytokem	Warren Steck	(306) 955-1974
Globial Botanicals	Joel Thuna/ Kathy Vessair	(705) 753-2117
The Herb Works	Richard De Sylva	(519) 824-4280
Horizon Herbs	Richo Cech	(541) 846-6704
McKiwin	Ivan Milne	(204) 724-5956
Northwest Botanicals	Richard Miller	(541) 476-5588
Pacific Botanicals	Graham Smith	(541) 497-7777
Trout Lake Farms	Brian Rust	(509) 395-2025

Information

Herbal Green Pages	Maureen Rogers	(717) 393-3295
SIDC	Harvey Clarke	(306) 867-5402
University of Saskatchewan	Branka Burl	(306) 966-5868
University of Brandon	Robin Marles	(204) 727-7334

NorSask Botanicals Inc.
Agronomic for Herbs Growing in the North East

Herb:_____
Organically Grown: _____ yes _____ no

Crop Establishment:

Stratification Process: _____

_____

_____

_____

Germination Process: _____

_____

_____

Days to germination_____ percentage of germination:_____

Date Transplanted into field & moisture condition: _____

_____

Row and plant spacing: _____

Date if direct seeded & moisture conditions:

_____

Row and plant spacing: _____

_____

Seed depth and rate: _____

Days to germination & Percentage of germination if direct seeded:

_____

Total hours of labour need to establish plants to this point:

Crop Development:

Soil Moisture: _____ poor _____adequate _____ good

Irrigation : _____yes _____ no

Amount of water substituted for the season - if any:

_____

Percentage of crop which survived growing season: _____

Production management you would recommend to others:

_____

_____

_____

Production problem you would avoid next time:

_____

_____

_____

Stage of plant development reached:

_____

Method of Weed Control:

_____

_____

Hours spent maintaining the plants through the growing season: _____

Steps to insure winter survival:

_____

_____

Harvest

Date of Harvest: _____

Parts of Plants harvested: _____

Procedure for harvesting: _____

_____

_____

_____

Soil & Moisture conditions:

_____

_____

Hours of labor to complete harvest: _____

Storage & Marketing

Preparation of herb prior to storage (washing, drying, etc.):

_____

_____

_____

Storage procedure:

_____

_____

_____

Hours of labor needed to prepare produce for storage: _____

Advances in Marketing:

_____

_____

Operating Costs:

	Year 1	Year 2	Year 3	Year 4
Seed				
Potting Soil				
Potting trays and supplies				
Cost of seedlings				
Organic fertilizer				
Pest control				
Cost of irrigation equipment				
Energy cost for greenhouse				
Organic certification cost				
Inspection fees				
Machinery costs				
Cost of analysis				
Marketing cost				
Other costs				
Total Cost of Production				

Return on investment:

	Yield	expected price/pound	Income
Seed			
Herb			
Root			
		Total Revenue	